

Fig. 3 is a bottom view of a patient levitation apparatus in accordance with one embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Fig. 1 is a perspective view of a patient levitation apparatus in accordance with one embodiment of the invention. As shown in Fig. 1, patient levitation apparatus 10 is comprised of patient board 20 and plenum member 40. In this embodiment, patient board 20 is a substantially rigid 70" to 72" by 20" to 22", three-eighths or quarter inch thick, plastic board that is approved for hospital use. It should be appreciated that patient board 20 may be constructed in other similar dimensions. A patient may be placed on patient board 20 by rolling the patient onto their side while board 20 is placed beneath the patient and which the patient then rolls back onto patient side 22 of board 20.

Fig. 2 is a side view of the patient levitation apparatus. As shown in Fig. 2, an intake port hole 26 is drilled into the foot of patient board 20. An intake port sleeve 46 is inserted into intake port hole 26. In this embodiment, intake port sleeve 46 is a 1" to 2" plastic port sleeve, glued and screwed into board 20, and adapted to permit the attachment of a hose from a blower motor for delivering a flow of pressurized air to plenum member 40.

Patient board 20 has a bottom 24, to which plenum member 40 is attached. In this embodiment, plenum member 40 is constructed of a thin sheet of rigid plastic attached to bottom 22 of patient board 20, wherein a half inch square plastic or rubberized piece of plenum member 40 is glued to the perimeter of bottom 22. Plenum member 40 is adapted to receive a flow of pressurized air through intake port sleeve 46, creating a half inch to the three quarter inch plenum area beneath patient board 20. Additional half inch square plastic or rubberized pieces are placed across the 20-22" span of the board at intervals for support and which will permit the

constant flow of the pressurized air supply. The braces would be glued to patient board 20 to plenum member 40.

Fig. 3 is a bottom view of a patient levitation apparatus. As shown in Fig. 3, plenum member 40 includes a plurality of vent holes 48, through which the flow of pressurized air received into plenum member 40, through intake port sleeve 46, is designed to be released, or escape, to create a cushion of air beneath patient levitation apparatus 10. In this embodiment, holes 48 are fine, needle sized holes, inserted at every half inch per line and where each following line is spaced a quarter inch apart and where each alternating line is offset a quarter inch. It should be appreciated that other hole spacing patterns for holes 48 may also be employed.

The escape of the pressurized air supply from plenum member 40 through the plurality of holes 48, in a uniform and controlled pattern, causes patient board 20 and up to a four hundred (400) pound patient to be levitated on a cushion of air that exists between the levitated patient and a bed, gurney, or examination table.

It should be appreciated that the plenum member may also be comprised of a vinyl fabric stretched across the entire bottom of patient board. In such an embodiment employing vinyl fabric, a six (6) inch flap of the vinyl fabric is folded onto the patient side of the patient board where all edges of the flaps are glued to the top edges of the patient board, creating a half inch plenum where the pressurized air is applied and permitted to escape from numerous vent holes in the fabric.

The pressurized air is supplied by a small blower motor that is connected to the patient board 20 via a plastic hose connected to intake port sleeve 46 at the foot of the board 20. The pressurized air is supplied by a half horsepower (other sizes can also be used) blower motor,

which will be a sealed unit approved for hospital room use. A six foot 1 to 2" diameter plastic hose is employed to connect the blower motor to apparatus 10.

When the blower is activated, the pressurized air enters plenum member 40 and slowly escapes from holes 48, causing the patient levitation apparatus 10 and patient to be levitated off the bed or other solid surface. A flexible piece of material can be added to the edges of board 20 to form a skirt to create additional lift in circumstances that may require additional space between board 20, the patient and the bed or examination surface. Once apparatus 10 and patient are levitated, a single attendant who controls the small pressurized air supply unit is then able to glide the foot of apparatus 10 from the bed to the gurney and to then glide the head of apparatus 10 to complete the transfer of the patient. Accordingly, an attendant can glide apparatus 10 and the patient from the bed to the gurney without physical exertion. The air supply is then terminated and the patient is gently lowered onto the gurney and taken to an examination table. The same procedure is employed to return the patient to their bed.

The disclosed medical patient levitation apparatus permits hospital attendants to move patients from a hospital bed to a gurney or examination table on a cushion of air, with only the slightest physical exertion, without causing discomfort to the patient and without subjecting attendants to lower back injuries from lifting patients from beds to gurneys.

The disclosed apparatus also permits the changing of bed linens while the patient is levitated above the bed itself, on a cushion of air. The same apparatus is also employed in hospitals or for invalid home care, to lift a patient off the bed so that soiled bed linen can be removed and replaced with no discomfort to the patient and no strain on the home care giver or an attendant. The disclosed apparatus will also permit caretakers of bed ridden rehabilitation patients and other bed ridden invalids to have linen changed by a single caretaker without being

subjected to discomfort, eliminating the need for visiting nurses or caretakers to assist in this procedure. To change bed linens, either in a hospital or invalid home care setting, the patient is placed on the apparatus and the air supply is applied causing the board and patient to be levitated in place over the bed. The home care or hospital attendant is then able to remove the soiled linen off of the bed and to place clean linen back on the bed by sliding the linen through the cushion of air that is supporting the patient without disrupting the levitation of the board and patient.

B/ The use of the disclosed apparatus by hospitals and home care givers will permit attendants to lift and move patients on a comfortable cushion of air, thereby eliminating the current extreme discomfort that patients experience when required to be moved to examination tables. The disclosed apparatus will dramatically reduce, if not eliminate all patient discomfort when required to be moved to such examination tables and will serve to prevent lower back injuries to hospital or home attendants. The disclosed apparatus will virtually eliminate hospital attendants having to be placed on medical leave because of lower back injuries they currently sustain when they are required to lift and shift patients from beds to gurneys. The disclosed apparatus is lightweight and simple to use, so that any hospital employee can be trained and certified in its use. The disclosed apparatus will gently float patients off the surface of the bed on a cushion of air, in comfort, while a home caregiver or hospital attendant removes and replaces soiled bed linens.
